CLAIMS

We claim:

1. A method of constructing a model for estimating electrical characteristics for an extraction sub problem, said method comprising:

identifying a set of physical measurements that define said extraction sub problem;

selecting a set of training cases for said specific extraction sub problem, each of said training cases including an associated set of said physical measurements;

solving said specific extraction sub problem for each of said training cases using said associated set of physical measurements as an input to an accurate physics based model to generate an associated output; and

training a machine-learning model with Bayesian inference using said associated set of physical measurements and associated outputs as training data.

2. The method as claimed in claim 1 wherein said electrical characteristic comprises capacitance.

3. The method as claimed in claim 1 wherein said electrical characteristic comprises resistance.

4. The method as claimed in claim 1 wherein said extraction sub problem comprises a section of interconnect wire and nearby interconnect wiring within a define halo.

5. The method as claimed in claim 1 wherein said extraction sub problem comprises a section of interconnect wiring.

6. The method as claimed in claim 1 wherein one of said set of physical parameters comprises a spacing between a pair of interconnect lines.

7. The method as claimed in claim 1 wherein one of said set of physical parameters comprises a wire width.

8. The method as claimed in claim 1 wherein one of said set of physical parameters comprises a wire length.

9. The method as claimed in claim 1 wherein selecting a set of training cases comprises randomly generating input parameters with a gamma probability distribution.

10. The method as claimed in claim 1 wherein said electrical characteristic comprises delay.

11. The method as claimed in claim 1 wherein said machine-learning model comprises a neural network.